

Substitute for form 1449A-B/PTO <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(use as many sheets as necessary)</i>		Complete if Known	
		Application Number	09/920,452
		Filing Date	July 31, 2001
		First Named Inventor	Sun Ai Raillard
		Group Art Unit	Unassigned
		Examiner Name	Unassigned
		Attorney Docket Number	02-107410US

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	U.S. Patent Document Number	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, lines, Where Relevant Passages or Relevant Pages Appeal
RD	AA	5,512,463	Stemmer	04-30-1996	435/9.2
	AB	5,514,588	Varadaraj	05-07-1996	282
	AC	5,605,793	Stemmer	02-25-1997	6
	AD	5,763,239	Short et al.	06-09-1998	172.1
	AE	5,789,228	Lam et al.	08-04-1998	209
	AF	5,811,238	Stemmer et al.	09-22-1998	6
	AG	5,814,473	Warren et al.	09-29-1998	15
	AH	5,824,469	Horwitz et al.	10-20-1998	6
	AI	5,830,696	Short	11-03-1998	69.1
	AJ	5,830,721	Stemmer et al.	11-03-1998	172.1
	AK	5,834,252	Stemmer et al.	11-10-1998	91-1
	AL	5,837,458	Minushull et al.	11-17-1998	6
	AM	5,866,363	Pieczenik	02-02-1999	69.1
	AN	5,876,997	Kretz	03-02-1999	435/196
	AO	5,925,749	Mathur, et al.	07-20-1999	538/281
	AP	5,928,905	Stemmer, et al.	07-27-1999	435/91.1
	AQ	5,939,250	Short, Jay M.	08-17-1999	4
	AR	5,939,300	Robertson, et al.	08-17-1999	192
	AS	5,942,430	Robertson, et al.	08-24-1999	197
	AT	5,948,666	Callen, et al.	09-07-1999	194
	AU	5,958,672	Short, Jay M.	09-28-1999	4
	AV	5,958,751	Murphy, et al.	09-28-1999	208
	AW	5,962,258	Mathur, et al.	10-05-1999	69.1
	AX	5,962,283	Warren et al.	10-05-1999	128
	AY	5,965,408	Short, Jay M.	10-12-1999	91.1
	AZ	5,985,646	Murphy, et al.	11-16-1999	282.3
RD	BA	6,001,574	Short et al.	12-14-1999	435/6
Examiner Signature	<i>[Signature]</i>			Date Considered	4/17/03

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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RAD	BB	6,004,788		Short	12-21-1999	435/183
	BC	6,030,779		Short	02-29-2000	6
	BD	6,054,267		Short	04-25-2000	6
	BE	6,057,103		Short	05-02-2000	6
	BF	6,096,548		Stemmer	08-01-2000	440
	BG	6,117,679		Stemmer	09-12-2000	440
	BH	6,132,970		Stemmer	10-17-2000	6
	BI	6,165,793		Stemmer	12-26-2000	440
	BJ	6,168,919		Short	01-02-2001	6
	BK	6,171,820		Short	01-09-2001	69.1
	BL	6,174,673		Short, et al.	01-16-2001	6
	BM	6,180,406		Stemmer	01-30-2001	440
RAD	BN	6,238,884		Short et al.	05-29-2001	435/69.1

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Examiner Initials	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
		Office	Number	Kind Code (if known)				
RAD	BO	WO	97/07205		Novo Nordisk A/S	02-27-1997		
	BP	WO	97/20078		Affymax Technologies	06-05-1997		
	BQ	WO	97/25410		Novo Nordisk A/S	07-17-1997		
	BR	WO	97/35957		Maxygen, Inc.	10-02-1997		
	BS	WO	97/35966		Maxygen, Inc.	10-02-1997		
	BT	WO	97/44361		Recombinant Biocatalysis Inc.	11-27-1997		
	BU	WO	97/48416		Recombinant Biocatalysis, Inc.	12-24-1997		
	BV	WO	97/48717		Recombinant Biocatalysis Inc	12-24-1997		
	BW	WO	97/48794		Recombinant Biocatalysis Inc	12-24-1997		
RAD	BX	WO	98/00526		Recombinant	01-08-1998		

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				Biocatalysis Inc		
RH	BY	WO	98/01581	Recombinant Biocatalysis Inc	01-15-1998	RECEIVED DEC 1 4 2001 TECH CENTER 1600/2900
D	BZ	WO	98/13485	Maxygen, Inc.	04-02-1998	
	CA	WO	98/13487	Maxygen, Inc.	04-02-1998	
	CB	WO	98/24799	Diversa Corp.	06-11-1998	
	CC	WO	98/27230	Maxygen, Inc.	06-25-1998	
	CD	WO	98/28416	Novo Nordisk A/S	07-02-1998	
	CE	WO	98/31837	Maxygen, Inc.	07-23-1998	
	CF	WO	98/36080	The Dow Chemical Company	08-20-1998	
	CG	WO	98/41622	Novo Nordisk A/S	09-24-1998	
	CH	WO	98/41623	Novo Nordisk A/S	09-24-1998	
RH	CI	WO	98/41653	Novo Nordisk A/S	09-24-1998	
	CJ	WO	98/42832	California Institute of Technology	10-01-1998	
	CK	WO	98/48034	Diversa Corp.	10-29-1998	
	CL	WO	98/58085	Diversa Corp.	12-23-1998	
	CM	WO	99/07837	Diversa Corp.	02-19-1999	
	CN	WO	99/08539	Diversa Corp.	02-25-1999	
	CO	WO	99/10472	Diversa Corp.	03-04-1999	
	CP	WO	99/10539	Diversa Corp.	03-04-1999	
	CQ	WO	99/19518	Diversa Corp.	04-22-1999	
	CR	EP	0911396A2	Maxygen, Inc.	04-28-1999	
RH	CS	WO	99/21979	Maxygen, Inc.	05-06-1999	
	CT	EP	0911396A3	Maxygen, Inc.	05-06-1999	
	CU	WO	99/23107	Maxygen, Inc.	05-14-1999	
	CV	WO	99/23236	Diversa Corp.	05-14-1999	
RH	CW	WO	99/29902	California Institute of Technology et al.	06-17-1999	

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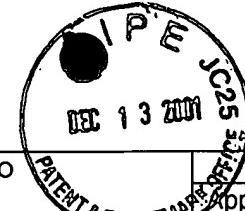
RW	CX	EP	0934999A1		Maxygen, Inc.	08-11-1999		RECEIVED DEC 14 2001
P	CY	WO	99/41368		Maxygen, Inc.	08-19-1999		
CZ	WO	99/41369			Maxygen, Inc.	08-19-1999		
DA	WO	99/41383			Maxygen, Inc.	08-19-1999		
DB	WO	99/41402			Maxygen, Inc.	08-19-1999		
DC	WO	99/45154			Diversa Corp.	09-10-1999		
RW	DD	WO	99/57128		Maxygen, Inc.	11-11-1999		
1	DE	WO	99/65927		Maxygen, Inc.	12-23-1999		
DF	WO	00/42560			Maxygen, Inc.	07-20-2000		
DG	WO	00/42561			Maxygen, Inc.	07-20-2000		
DH	WO	00/53744			Diversa Corporation	09-14-2000		
RW	DI	WO	00/58517		Diversa Corporation	10-05-2000		

#### OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T
RW	DJ	Chang, C., et al. (1999) "Evolution of a cytokine using DNA family shuffling." <u>Nature Biotechnology</u> 17:793-797.	
1	DK	Christians, F.C. et al., (1999) "Directed evolution of thymidine kinase for AZT phosphorylation using DNA family shuffling." <u>Nature Biotechnology</u> 17:259-264.	
X	DL	Coco et al., (2001) "DNA shuffling method for generating highly recombinant genes and evolved enzymes" <u>Nature Biotechnology</u> vol. 19 pp. 354-359	
0	DM	Crameri et al., (1993) "10(20)-Fold aptamer library amplification without gel purification," <u>Nuc. Acids Res.</u> 21(18):4410.	
	DN	Crameri, A. & Stemmer W.P.C. (1995) "Combinatorial multiple cassette mutagenesis creates all the permutations of mutant and wildtype cassettes." <u>Biotechniques</u> 18:194-195.	
	DO	Crameri, A. et al. (1996) "Improved green fluorescent protein by molecular evolution using DNA shuffling." <u>Nature Biotechnology</u> 14:315-319.	
	DP	Crameri, A. et al. (1996) "Construction and evolution of antibody-phage libraries by DNA shuffling." <u>Nature Medicine</u> 2:100-103.	
RW	DQ	Crameri, A. et al., (1997) "Molecular evolution of an arsenate detoxification pathway by DNA shuffling." <u>Nature Biotechnology</u> 15:436-438	

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R/V	DR	Crameri, A. et al., (1998) "DNA shuffling of a family of genes from diverse species accelerates directed evolution." <i>Nature</i> 391:288-291.
1	DS	Gates, C.M. et al., (1996) "Affinity selective isolation of ligands from peptide libraries through display on a lac repressor 'headpiece dimer'. <i>Journal of Molecular Biology</i> 255:373-386.
	DT	Minshull, J., Stemmer, W.P.C. (1999) "Protein evolution by molecular breeding." <i>Current Opinion in Chemical Biology</i> 3:284-290.
	DU	Ness, J. et al., (1999) "DNA shuffling of subgenomic sequences of subtilisin." <i>Nature Biotechnology</i> 17:893-896.
	DV	Patten, P.A. et al., (1997) "Application of DNA Shuffling to Pharmaceuticals and Vaccines." <i>Current Opinion in Biotechnology</i> 8:724-733.
	DW	Pelletier, Joelle N., (2001) "A Rachitt for our toolbox" <i>Nature Biotechnology</i> vol. 19, p. 314-315
	DX	Stemmer, W.P.C. (1994) "DNA Shuffling by random fragmentation and reassembly: In vitro recombination for molecular evolution." <i>PNAS</i> 91:10751
	DY	Stemmer, W.P.C. (1994) "Rapid evolution of a protein in vitro by DNA shuffling." <i>Nature</i> 370:389-391.
	DZ	Stemmer, W.P.C. (1995) "The Evolution of Molecular Computation." <i>Science</i> 270:1510
	EA	Stemmer, W.P.C. (1995) "Searching Sequence Space." <i>Bio/Technology</i> 13:549-553.
	EB	Stemmer, W.P.C. (1996) "Sexual PCR and Assembly PCR." In: <i>The Encyclopedia of Molecular Biology</i> . VCH Publishers, New York. pp. 447-457.
	EC	Stemmer, W.P.C. & Soong, N.W. (1999) "Molecular breeding of viruses for targeting and other clinical properties." <i>Tumor Targeting</i> 4:59-62.
R/V	ED	Zhang, J. et al., (1997) "Directed evolution of an effective fucosidase from a galactosidase by DNA shuffling and screening." <i>Proceedings of the National Academy of Sciences, USA</i> 94:4504-4509.

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